

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-352827

(43)Date of publication of application : 19.12.2000

(51)Int.CI.

G03F 7/36
 G03F 7/42
 H01L 21/027
 H01L 21/3065
 H01L 21/306

(21)Application number : 11-165681

(71)Applicant : NEC CORP

(22)Date of filing : 11.06.1999

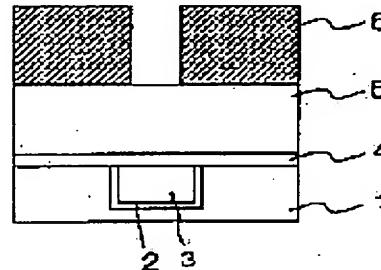
(72)Inventor : AOKI HIDEMITSU

(54) PRODUCTION OF SEMICONDUCTOR DEVICE

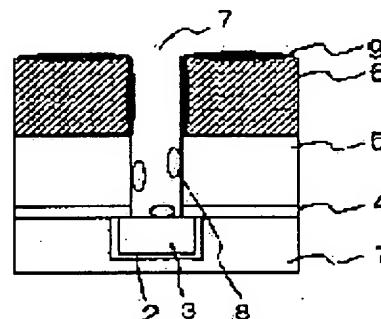
(57)Abstract:

PROBLEM TO BE SOLVED: To remove a resist film and a surface hardened layer of the resist produced when easily oxidizable films such as copper wiring and a low dielectric constant film are formed and dry etching for exposing these films is carried out without damaging the easily oxidizable films.

SOLUTION: An HSQ film 5 and a silicon nitride film 4 are dry-etched using a resist film 6 as a mask until the silicon nitride film 4 is exposed to form a through hole 7. Hydrogen/nitrogen plasma treatment is then carried out to vary the shape and properties of a surface hardened layer 9 of the resist, and the resist film 6, the surface hardened layer 9 of the resist and residue 8 on etching are removed by wet-treatment with an amine removing solution.



(a)



(b)

LEGAL STATUS

[Date of request for examination] 23.05.2000

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3287406

[Date of registration] 15.03.2002

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

BEST AVAILABLE COPY